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REPORT TO THE CONGRESS



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Examination Of
Financial Statements Of
The Tennessee Valley Authority
For Fiscal Year 1974

*BY THE COMPTROLLER GENERAL
OF THE UNITED STATES*

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MARCH 28, 1975



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

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21 To the President of the Senate and the
Speaker of the House of Representatives

This is our report on the examination of the Tennessee Valley Authority's financial statements for fiscal year 1974, pursuant to the Government Corporation Control Act (31 U.S.C. 851).

We are sending copies of this report to the Director, Office of Management and Budget; the Secretary of the Treasury; and the Chairman, Board of Directors, Tennessee Valley Authority.

A handwritten signature in dark ink, which appears to read "Thomas B. Atch", is written over the printed name of the Comptroller General.

Comptroller General
of the United States

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ABBREVIATIONS

GAO	General Accounting Office
TVA	Tennessee Valley Authority

*COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS*

EXAMINATION OF FINANCIAL STATEMENTS
OF THE TENNESSEE VALLEY AUTHORITY
FOR FISCAL YEAR 1974

D I G E S T

WHY THE EXAMINATION WAS MADE

This examination was made in accordance with the Government Corporation Control Act which requires the Comptroller General to audit financial transactions of the Tennessee Valley Authority (TVA). 103

OPINION ON FINANCIAL STATEMENTS

In GAO's opinion, TVA's financial statements present fairly its financial position at June 30, 1974 and 1973, and the results of its operations and the changes in the financial position of its several programs for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis. (See p. 23.)

OTHER MATTERS OF INTEREST

Power program

Operating results--At June 30, 1974, power program assets totaled \$4.809 billion, or about 87 percent of TVA's total assets. Operating revenues increased by \$134.2 million, or 18 percent, in fiscal year 1974. This increase, however, and a \$11.6 million increase in other income were more than offset by higher expenses, particularly higher cost fossil fuels and larger interest charges. As a result, net income of \$106.1 million in fiscal year 1974 was slightly less than that of the preceding year. (See p. 2.)

Of the \$106.1 million net income, TVA paid \$63.4 million into the Treasury as a return on the Government's investment in power facilities and the remaining \$42.7 million increased retained earnings. (See p. 3.)

In addition to the \$63.4 million, TVA paid \$20 million of power proceeds to the Treasury as partial repayment of the Government's investment in power facilities. The TVA Act required both payments. The Congress passed and the President vetoed a bill to allow TVA to credit its expenditures for certified pollution control facilities against these payments. (See p. 6.)

To assist in financing its power program, TVA issued \$450 million in bonds, bringing its outstanding notes and bonds to \$2.795 billion at June 30, 1974. This is within limitations of the act which permit a maximum outstanding concurrent debt of \$5 billion. (See p. 7.)

In July 1974, TVA's Board of Directors approved issuing short-term notes of up to \$350 million to the Federal Financing Bank. TVA issued a \$300 million bond to the bank in October 1974. (See p. 8.)

Rate adjustments--TVA raised its power rates by an average of 20 percent in January 1974 because of rising power system costs, particularly the cost of coal. Because of large and unpredictable variations in fuel costs, TVA adopted a fuel adjustment policy in

June 1974. Under this policy, TVA may adjust power rates monthly on the basis of month-to-month changes in the actual cost of fuel burned at its power plants. On the basis of actual fuel cost in June 1974, TVA raised its rates by about 3 percent, effective August 1974. (See pp. 4 and 5.)

Nuclear power developments--TVA's power generating capacity was 23.3 million kilowatts at June 30, 1974, an increase of 1.4 million kilowatts over the preceding year. A second unit of the Cumberland steam plant became operational on November 1, 1973, and accounted for most of the increase. (See p. 9.)

TVA plans to more than double its generating capacity over the next 10 years. If the six nuclear plants are completed by 1984, they will provide additional generating capacity of about 21.4 million kilowatts. TVA's first nuclear unit, at the Browns Ferry nuclear plant, began commercial operations on August 1, 1974. (See p. 9.)

Scheduled operational dates of TVA's nuclear units continue to slip. Unit 1 at Browns Ferry was delayed by about 4 years. Units 2 and 3, initially scheduled to begin commercial operation by October 1971 and October 1972, respectively, were rescheduled for December 1974 and September 1975. Overall the delay of the seven units under construction ranged from 5 to 8 months in fiscal year 1974. (See p. 11.)

According to TVA's estimates, about \$5.9 billion will be required to complete the major projects under construction or planned. (See p. 12.)

Coal procurement--Coal stockpiles at TVA's steam plants declined sharply, and prices rose to unprecedented levels in fiscal year 1974. TVA's short supply of coal and higher

prices were due to an imbalance of supply and demand and delinquent coal shipments.

About three-fourths of TVA's electric power was generated by 12 steam plants that burned 37.7 million tons of coal, costing about \$324 million, during the year. (See pp. 12 and 14.)

In August 1973, in response to a request for offers sent to 162 coal suppliers, TVA received 27 bids. TVA awarded contracts to 20 of the suppliers for delivery of 18.4 million tons, but this was not enough to meet projected needs.

In October 1973 TVA began exercising its emergency authority to purchase coal without advertising; however, the response continued to be poor. (See pp. 14 and 15.)

Coal deliveries to steam plants were as much as 24 percent short of that scheduled under TVA's long-term contracts. A variety of reasons were cited for the shortages. (See p. 16.)

In fiscal year 1974, TVA purchased coal at the highest price it had ever paid--166 percent above the previous year's average price. (See p. 17.)

TVA's objective was to maintain enough coal at its steam plants for 60- to 90-day continuous operation at the normal burn rate. However, by June 30, 1974, the supply had dropped to 23 days at two plants and 37 days at another plant.

Because of the declining coal stockpiles, TVA announced in August 1974 that electric power might be curtailed during the winter season and later asked that customers voluntarily reduce their use of electricity by 20 percent. (See p. 17.)

A coal miners' strike from November 12 through December 5, 1974, further aggravated TVA's coal supply situation. Even though TVA took steps to lessen the impact of the strike, its system-wide coal supply dropped from 45 to 34 days during the strike period. However, TVA had increased its stockpiles to a 38-day supply at the end of 1974. (See p. 18.)

Fertilizer program

Development production--Implementation of an operating plan--which TVA estimated would save about \$6 million--will not proceed on schedule because of the fluctuating fertilizer market conditions. Eventually, TVA plans to substitute commercial, wet-process phosphoric acid for

TVA-produced, electric-furnace acid as a source of phosphates and to shift its production of fertilizer ingredients from solid nitrates to urea. (See pp. 18 to 20.)

RECOMMENDATIONS OR SUGGESTIONS

This report contains no recommendations or suggestions.

MATTERS FOR CONSIDERATION
BY THE CONGRESS

This report, required by law, informs the Congress of the operations and financial condition of TVA.

CHAPTER 1

INTRODUCTION

The Tennessee Valley Authority (TVA) is an independent Government corporation created by the Tennessee Valley Authority Act of May 18, 1933 (48 Stat. 58, 16 U.S.C. 831), to improve the public usefulness of the Tennessee River and to assist in the development of other resources in the Tennessee Valley and adjoining areas. TVA generates, transmits, and sells electric power; helps control floods; promotes navigation on the Tennessee River; develops fertilizers and munitions; and participates in the development of recreational, agricultural, and other resources in the Tennessee Valley.

TVA activities are directed by its three-member Board of Directors. Members of the Board are appointed by the President, with the advice and consent of the Senate, to serve 9-year overlapping terms. The President also designates one member as Chairman. As of June 30, 1974, the Board members and the expiration dates of their terms were:

Aubrey J. Wagner, Chairman	May 18, 1978
Don McBride	May 18, 1975
William L. Jenkins	May 18, 1981

Mr. Lynn Seeber, TVA's General Manager, is responsible to the Board for carrying out its programs, policies, and decisions.

Additional information on TVA activities can be found in its annual report to the President and to the Congress, issued pursuant to the TVA Act.

CHAPTER 2

GENERAL COMMENTS ON PROGRAMS AND ACTIVITIES

In addition to providing for our examination of the financial statements, the Government Corporation Control Act (31 U.S.C. 851) provides that our reports include information and comments as may be appropriate to keep the Congress informed of the financial condition and operations of each corporation.

POWER PROGRAM

As part of its resource development program, TVA supplies power at wholesale prices to 160 municipal and cooperative electric systems which distribute the power to more than 2.4 million customers in parts of seven States. TVA also serves directly 47 industrial customers with large or unusual power requirements and several Federal atomic, aerospace, and military installations.

Financially, TVA's power program is separate from its other programs. The power program is self-supporting, and part of the net income earned under the program is used to pay a return on appropriated funds invested in TVA's power facilities and to repay the investment.

Operating results

Power program assets increased by \$456 million during the year and totaled \$4.809 billion at June 30, 1974, or about 87 percent of TVA's total assets of \$5.499 billion. TVA's power operations results for fiscal years 1974 and 1973 are shown on page 3.

	<u>1974</u>	<u>1973</u>	<u>Percent increase or decrease (-)</u>
(000 omitted)			
Operating revenues:			
Sales of electric energy	\$863,643	\$729,031	18
Rents	<u>19,983</u>	<u>20,349</u>	-2
Total operating revenues	883,626	749,380	18
Operating expenses	<u>679,499</u>	<u>577,429</u>	18
Operating income	204,127	171,951	19
Other income and deductions	<u>85,411</u>	<u>73,800</u>	16
Income before interest charges	289,538	245,751	18
Interest charges	<u>183,384</u>	<u>139,300</u>	32
Net income	106,154	106,421	-
Payment of return on appro- priation investment	<u>63,422</u>	<u>53,785</u>	18
Increase in retained earnings	<u>\$ 42,732</u>	<u>\$52,636</u>	-19

Exhibit II presents the details of the power program's operating results.

The volume of electric energy sold increased only slightly, about 3 percent, in fiscal year 1974 over the preceding fiscal year. This small growth rate was due mostly to a warmer-than-normal winter and a cooler-than-normal summer. Most of the increase which did occur resulted from larger sales to those industries served directly by TVA.

A midyear rate adjustment and the small increase in sales volume resulted in operating revenues that were \$134.2 million, or 18 percent, higher in fiscal year 1974 than in 1973. However, this increase, plus the \$11.6 million increase in other income, was more than offset by a \$102.1 million, or 18 percent, increase in operating expenses and a \$44.1 million,

or 32 percent, increase in interest charges. As a result, net income in fiscal year 1974 was slightly less than that of 1973.

About \$85.4 million, or 84 percent, of the \$102.1 million increase in operating expenses was due to higher production expense, which increased primarily because of higher cost fossil fuels used in power generation. As in previous years, interest charges increased because of the continued growth of TVA's debt and because of higher interest rates.

Although the appropriation investment continued to decline, TVA's payment to the Treasury as a return on that investment increased by \$9.6 million, or 18 percent, because of an increase in the interest rate prescribed by the TVA Act. In 1975, the payment will be about \$8 million more than it was in 1974 because of a further rate increase.

Earnings available to reinvest in the power program were about \$9.9 million, or 19 percent, less in 1974 than in 1973.

Rate adjustments

The TVA Act requires TVA to sell power at rates as low as possible but high enough to maintain the financial soundness of the power program. TVA and a committee representing distributors review current and prospective power revenues and expenses quarterly. On the basis of the review, the Board of Directors determines whether a rate adjustment is needed. The Board approved a raise in the power rates, which averaged about 20 percent, effective January 1974 because of rising power system costs, particularly coal costs.

Because of large and unpredictable variations in fuel costs, in July 1974 the Board approved having charges for electric power, beginning in August, reflect monthly increases or decreases in the actual cost of fuel burned at TVA power plants. TVA determines the amount of the increase or decrease in fuel costs and publishes necessary rate changes about the middle of the month preceding each billing. Under this adjustment about 3 percent was added to August bills on the basis of the cost of fuel burned in June 1974. TVA continues to make quarterly reviews, pursuant to provisions

in its customer contracts, of power system revenues and expenses to determine whether other rate adjustments are necessary.

Proprietary capital and
payments to the Treasury

The Government's total proprietary capital in TVA was \$2.548 billion at June 30, 1974, and \$1.882 billion, or 74 percent, of this amount was in the power program. Changes in proprietary capital during fiscal year 1974 are shown in the following tabulation.

	Change		
	<u>Power</u>	<u>Nonpower</u>	<u>Total</u>
	_____(000 omitted)_____		
Appropriation investment:			
Congressional appropriations	\$ 135	\$45,541	\$45,676
Transfers of property from other Federal agencies	<u>323</u>	<u>76</u>	<u>399</u>
	458	45,617	46,075
Less repayments to general fund of the Treasury	<u>-20,000</u>	<u>-12</u>	<u>-20,012</u>
Appropriation investment	-19,542	45,605	26,063
Net income of power program	106,154	-	106,154
Net expense of nonpower programs	-	-41,489	-41,489
Less payment of return on appropriation investment	<u>-63,422</u>	<u>-</u>	<u>-63,422</u>
Net increase in proprietary capital	<u>\$ 23,190</u>	<u>\$ 4,116</u>	<u>\$27,306</u>

Section 15d of the TVA Act requires the corporation to pay to the Treasury each year, beginning with fiscal year 1961, a return on the appropriation investment in power facilities. The required payment is based on the average interest rate payable by the Treasury on its total marketable public obligations at the beginning of the fiscal year. The rate is applied to the unrepaid appropriation investment on that date. In fiscal year 1974 the payment of return was \$63.4 million, which brought total return payments since 1961 to \$686 million.

Section 15d also requires a repayment of the appropriation investment in power facilities beginning in fiscal year 1961. The required repayments are: \$10 million annually for the first 5 years (1961-65), \$15 million annually for the next 5 years (1966-70), and \$20 million every year thereafter until \$1 billion has been repaid. Under specified conditions the Board may defer payments for not more than 2 years, but the Board has not exercised that option. TVA's repayment of \$20 million in fiscal year 1974 brought the cumulative payments under this provision to \$205 million. Under legislation in effect before the 1961 repayment provision, TVA has repaid \$185 million to the Treasury, making the total repayment \$390 million.

Section 26 of the act provides for annual payments to the Treasury of any power or nonpower proceeds not needed for the operation of dams and reservoirs, the operation of the power program, or the manufacture and distribution of fertilizers. TVA had paid \$41.6 million from nonpower proceeds under this provision through June 30, 1974.

In fiscal year 1975 TVA will be required to pay the Treasury from power proceeds \$71.4 million as a return on the \$1.015 billion unpaid appropriation investment in power facilities as of July 1, 1974 (based on an average interest rate of 7.03 percent being paid by the Treasury on its total marketable public obligations) and \$20 million as a repayment of that investment.

Late in the 93d Congress the House and Senate passed a bill to amend section 15d of the TVA Act to provide that, beginning with fiscal year 1976, TVA's expenditures for certified pollution control facilities may be credited against the annual payments required as a return on the

appropriation investment in power facilities and the repayment of the investment. However, the President vetoed the bill after the Congress adjourned.

Borrowing authority

TVA is authorized, under section 15d of the act, to issue and sell bonds, notes, and other evidences of indebtedness up to \$5 billion outstanding at any one time to help finance its power program. Section 15d states that the time of issuance and the maximum interest rates to be borne by the obligations are subject to approval by the Secretary of the Treasury, who is authorized to purchase TVA interim obligations up to \$150 million outstanding at any one time. Debt service on these obligations is payable solely from TVA's net power proceeds and has precedence over repayments of the appropriation investment and payments of a return on investment to the Treasury. Outstanding notes and bonds totaled \$2.795 billion at June 30, 1974.

Section 3.4 of the Basic Tennessee Valley Authority Power Bond Resolution adopted October 6, 1960, prohibits any increases in outstanding bonds unless a power income test specified in the resolution is met. To meet the test, net power income for the last 5 fiscal years must have aggregated at least:

\$200 million,

plus

\$15 million for each one-quarter of 1 percent (or major fraction thereof) by which the interest on Treasury borrowings has averaged more than 3.25 percent during the 5 years.

TVA met the minimum net income requirement for the 5 years ended June 30, 1973, and sold \$450 million in bonds in four issues during fiscal year 1974. TVA's net power income for these 5 years aggregated \$463 million, and the minimum net power income requirement for that period was \$320 million.

Short-term notes payable to the public totaled \$570 million at June 30, 1974--an increase of \$90 million since June 30, 1973. Short-term notes payable to the Treasury at June 30, 1974, totaled \$100 million, the same as at June 30, 1973.

The Federal Financing Bank Act of 1973 (Public Law 93-224), approved December 29, 1973, created the Federal Financing Bank and provided for coordinated and more efficient financing of Federal and federally assisted borrowings from the public. Although the TVA Act authorizes the agency to sell debt obligations to the public, it is also authorized to use the facilities of the Federal Financing Bank. On July 11, 1974, the TVA Board approved the issuance of a maximum of \$350 million in short-term notes payable to the bank. On that same date, the Board rescinded an earlier approval of the direct issuance of \$100 million in bonds to the public. On October 30, 1974, the Board approved the issuance of a \$300 million bond payable to the bank.

CONSTRUCTION ACTIVITIES

At June 30, 1974, the book value of TVA's fixed assets was \$5.146 billion, an increase of \$445 million from June 30, 1973. A summary of the fiscal yearend balances and changes, by major category of fixed assets, follows.

	<u>Balance</u>		<u>Increase or</u>
	<u>June 30, 1974</u>	<u>June 30, 1973</u>	<u>decrease (-)</u>
	<u>(000 omitted)</u>		
Completed			
plant, net	\$3,380,433	\$3,221,140	\$159,293
Construction			
in progress	1,631,931	1,381,324	250,607
Investigations			
for future			
projects	3,819	5,484	-1,665
Nuclear fuel,			
net	<u>129,943</u>	<u>93,090</u>	<u>36,853</u>
	<u>\$5,146,126</u>	<u>\$4,701,038</u>	<u>\$445,088</u>

TVA's power program assets accounted for 83 percent of the completed plant at June 30, 1974, and power facilities accounted for 95 percent of the construction in progress and investigations for future projects at that time.

At yearend, TVA's installed power generating capacity was 23.3 million kilowatts, an increase of about 1.4 million kilowatts over the previous year's capacity. Most of the increase resulted from accepting a second unit at the Cumberland steam plant on November 1, 1973, for commercial operation, which provided additional capacity of 1.3 million kilowatts.

To meet the projected growth of power demands, TVA plans to more than double its power generating capacity over the next 10 years. By 1984, TVA's planned generating capacity will be about 47 million kilowatts. Six nuclear plants, containing 17 generating units, will provide about 21.4 million kilowatts of the new capacity. Peaking capacity--units normally used only during periods of highest power demands--is scheduled to be boosted by installing additional gas turbines and constructing a pumped-storage hydroelectric project.

TVA awarded a contract in May 1974 for a 10-unit, 678,000 kilowatt gas turbine plant to be erected at the Johnsonville steam plant site by the summer of 1975. TVA is planning to install 10 additional gas turbine units--6 more for the Johnsonville site and 4 for a site near the Gallatin steam plant--that will add another 738,000 kilowatts to its generating capacity.

Five nuclear projects and a pumped-storage project under construction or proposed at June 30, 1974, will increase TVA's generating capacity by 17.8 million kilowatts. TVA's estimates of the scheduled dates for commercial operation of the 17 units constituting these projects follow.

	Generating unit number	Nameplate capacity (kilowatts)	Scheduled commercial service dates	
			Original	Fiscal year 1974
Browns Ferry nuclear plant	1	1,152,000	Oct. 1970	^a Aug. 1974
	2	1,152,000	Oct. 1971	Dec. 1974
	3	1,152,000	Oct. 1972	Sept. 1975
		<u>3,456,000</u>		
Raccoon Mountain pumped-storage project	1	382,500	Sept. 1974	Dec. 1975
	2	382,500	Dec. 1974	Feb. 1976
	3	382,500	Mar. 1975	Apr. 1976
	4	<u>382,500</u>	June 1975	June 1976
		<u>1,530,000</u>		
Sequoyah nuclear plant	1	1,220,580	Oct. 1973	Aug. 1976
	2	<u>1,220,580</u>	Apr. 1974	Apr. 1977
		<u>2,441,160</u>		
Watts Bar nuclear plant	1	1,269,900	Oct. 1976	Nov. 1978
	2	<u>1,269,900</u>	Apr. 1977	Aug. 1979
		<u>2,539,800</u>		
Bellefonte nuclear plant	1	1,332,000	July 1977	Dec. 1979
	2	<u>1,332,000</u>	Apr. 1978	Sept. 1980
		<u>2,664,000</u>		
Proposed Hartsville nuclear plant	1	1,285,000	Apr. 1979	Dec. 1980
	2	1,285,000	Apr. 1980	Dec. 1981
	3	1,285,000	Oct. 1979	June 1981
	<u>4</u>	<u>1,285,000</u>	Oct. 1980	June 1982
		<u>5,140,000</u>		
	<u>17</u>	<u>17,770,960</u>		

^aActual.

At the close of fiscal year 1974, TVA was evaluating bids for four additional nuclear generating units but had not selected plant sites. These units are to provide a total capacity of 5.2 million kilowatts and were tentatively scheduled for operation in the 1982-84 timeframe.

Unit 1 of the three-unit Browns Ferry nuclear plant, near Athens, Alabama, reached 100-percent power level on March 24, 1974, and was accepted for commercial operation on August 1, 1974. The unit's output of 1.098 million kilowatts on March 24 set a world record for a single nuclear unit. Construction of the Browns Ferry plant (see photograph on p. 13) was 94-percent complete at June 30, 1974. The Raccoon Mountain, Sequoyah, and Watts Bar projects were 55-, 65-, and 10-percent complete, respectively, at June 30, 1974. Construction of the Bellefonte and proposed Hartsville projects was scheduled to begin in fiscal year 1975.

Commercial operation of unit 1 at Browns Ferry was originally scheduled to begin in October 1970, almost 4 years before commercial operation actually began. Units 2 and 3, originally scheduled for operation in October 1971 and October 1972, were not expected to be operational until December 1974 and September 1975. Commercial operation dates are also being rescheduled for the units at the Sequoyah and Watts Bar plants. In fiscal year 1974, estimated completion dates of the seven nuclear units under construction were extended from 5 to 8 months. Some reasons for the construction delays were technical difficulties in meeting Atomic Energy Commission¹ requirements for environmental protection and engineered safeguards, delays in equipment deliveries, and modifications in the scope of project features.

Unit 1 of the Raccoon Mountain pumped-storage project is scheduled for commercial operation in December 1975 and the other three units are scheduled to follow at 2-month intervals. When the project is operational, water will be

¹The Atomic Energy Commission was abolished by the Energy Reorganization Act--Public Law 93-438, Oct. 11, 1974--and its functions were transferred to the newly created Energy Research and Development Administration and Nuclear Regulatory Commission.

pumped from the Tennessee River into a mountaintop reservoir during offpeak power periods and released to generate electric energy during peak periods.

For fiscal year 1974, TVA's capital outlay under the power program totaled \$525 million, most of which was for additions to generating capacity. The estimated cost to complete the major power projects was \$5.9 billion.

COAL PROCUREMENT

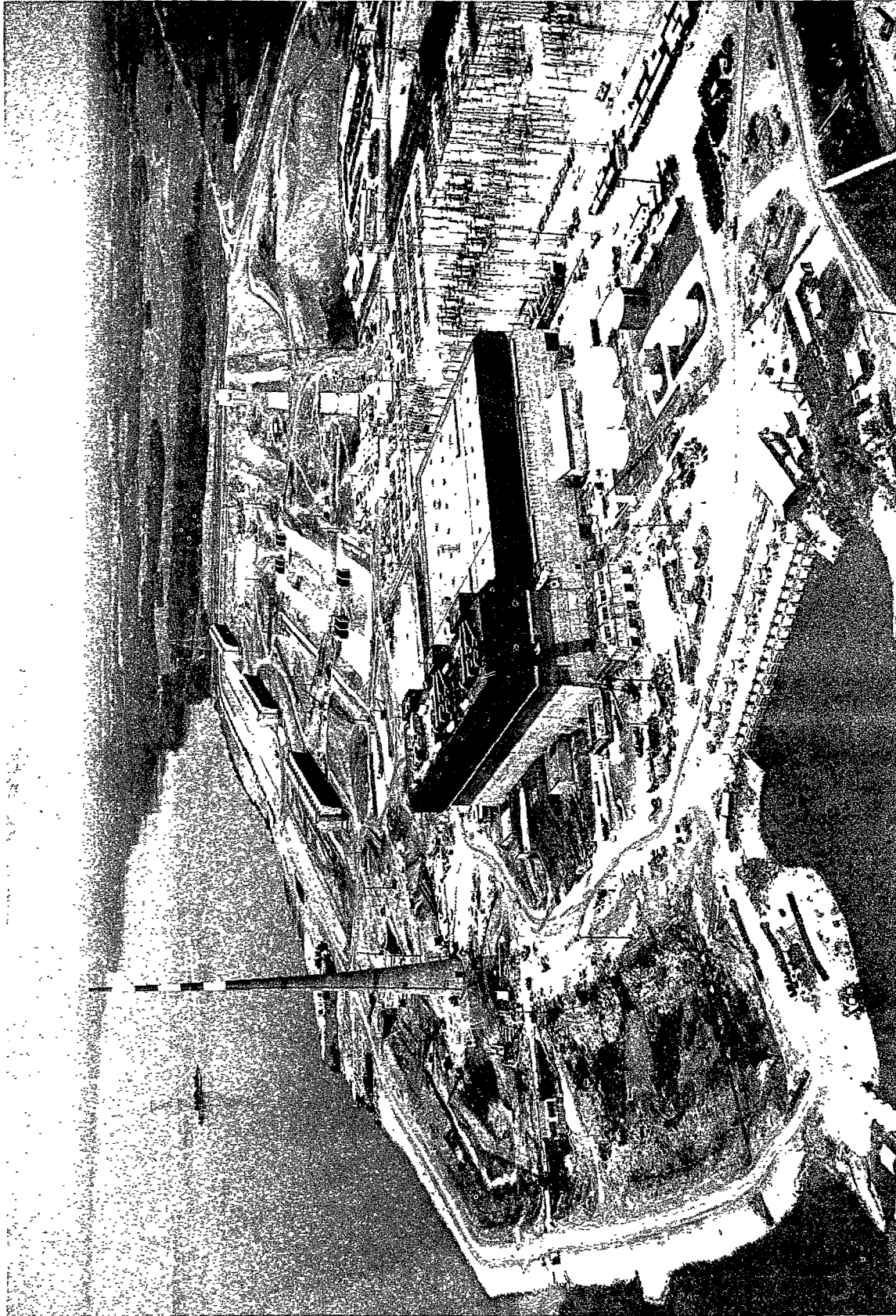
In fiscal year 1974 TVA's procurement of coal became progressively complicated because of decreasing supply and increasing demand. TVA was unable to obtain sufficient quantities at acceptable prices to offset deficiencies in deliveries. As a result, coal inventories at steam plants declined sharply and TVA purchased coal at the highest price it had ever paid.

Coal-fired steam plants accounted for about three-fourths of TVA's electric generating capacity and actual power generation; the other one-fourth was comprised of hydroelectric, nuclear, and turbine units, as shown in the table below.

	<u>Number</u>		<u>Installed capacity</u> <u>June 30, 1974</u>		<u>Generation fiscal</u> <u>year 1974</u>	
	<u>Plants</u>	<u>Units</u>	<u>Kilowatts</u>	<u>Percent</u>	<u>Kilowatt</u> <u>hours</u> <u>(millions)</u>	<u>Percent</u>
Coal-fired						
steam	12	63	17,749,585	76.1	84,084.1	76.5
Hydro-						
electric	29	109	^a 4,472,645	19.2	^a 23,536.3	21.4
Nuclear	(b)	(b)	(b)	(b)	1,947.6	1.8
Gas turbine	2	28	<u>1,096,800</u>	<u>4.7</u>	<u>291.7</u>	<u>.3</u>
Total system			<u>23,319,030</u>	<u>100.0</u>	<u>109,859.7</u>	<u>100.0</u>

^aIncludes capacity and generation of 20 hydroelectric units not owned by TVA.

^bUnit 1 at Browns Ferry produced power when in test operation.



(Photograph courtesy of TVA)

Browns Ferry nuclear plant. The plant, with total installed capacity of 3,456,000 kilowatts from three generating units, was about 94-percent complete at June 30, 1974. TVA accepted unit 1 for commercial operation on August 1, 1974.

In fiscal year 1974 TVA's steam plants burned 37.7 million tons of coal costing about \$324 million. By 1980, annual coal consumption at the steam plants is expected to increase to 46 million tons as the demand for electric power increases. TVA's power system will be heavily dependent on coal well into the future, notwithstanding the planned construction of numerous nuclear power units, as discussed on page 9.

TVA made term, spot, and emergency purchases of coal. Both term and spot purchases were made under competitive bidding procedures; the delivery schedules for term contracts were 6 months or longer and for spot contracts were 4 weeks or less. Emergency purchases were made without advertising under section 9(b) of the TVA Act. TVA's operating policy provides that, when the coal stockpile at any one steam plant is insufficient for 60 days' continuous operation, an emergency exists and contracts may be made by negotiation in lieu of advertising. TVA attempts to maintain a 60- to 90-day reserve stockpile at its steam plants in case of interruptions in coal production or transportation. On July 1, 1973, these reserves totaled approximately 12.5 million tons, or about a 100-day supply.

In August 1973 TVA received 27 proposals in response to a solicitation sent to 162 coal suppliers. During October and November 1973, TVA awarded contracts to 17 of the 27 bidders; negotiated contracts with 3 bidders whose bids were initially rejected as nonresponsive; and attempted, unsuccessfully, to negotiate contracts with 3 other bidders who had submitted nonresponsive bids. The 20 contracts provided for delivery of about 86,000 tons of coal weekly, or a total of 18.4 million tons. However, this was not enough to meet projected burn requirements and maintain satisfactory coal inventories at the steam plants.

In October 1973 TVA concluded that a seller's market was developing because new mine development was lagging behind increasing coal demand. TVA pointed out that the following matters greatly contributed to the national coal shortage:

- Production of bituminous coal (the principal type of coal burned in TVA power plants) was down 2 percent and utilities consumption was up about 10 percent from calendar year 1972 levels.
- Federal and State legislation, primarily governing health and safety of miners and reclamation of strip-mined lands, reduced coal production.
- Opening of new mines had been hampered by uncertainty regarding Federal and State laws on air pollution and fears of more stringent strip-land reclamation requirements.

TVA expected the coal demand to increase further due to shortages of competing fuels (oil and natural gas) and the failure of nuclear fueled generating capacity to become operational as rapidly as anticipated.

In October 1973 the TVA Board of Directors attempted to reverse its dwindling stockpiles by deciding that a state of emergency existed and by authorizing coal purchase without advertising, pursuant to section 9(b) of the TVA Act. Section 9(b) requires that all purchases and contracts for supplies and service (except personal services) made by TVA shall be based on advertising except in certain instances as cited in the act, including emergency situations requiring immediate supply delivery or service performance.

On October 12, 1973, TVA issued a request for proposals soliciting offers from more than 200 potential suppliers to sell coal to TVA under negotiated term contracts, but the response was poor. In December 1973 TVA expanded the solicitation to include offers for delivery terms of less than 6 months, and the agency continued to make spot purchases under advertised awards. However, since TVA was able to purchase only small tonnages of coal through its advertisements, it suspended the use of these advertisements in March 1974 and began to make all spot purchases on the basis of negotiation.

Through June 30, 1974, TVA's negotiation efforts had resulted in 16 term contracts (primarily to replace expiring contracts) for 6.8 million tons and 17 spot contracts for 213,353 tons.

In its October 1973 issue of requests for proposals, TVA indicated its willingness to consider offers containing contract provisions that differed from its normal requirements, except those provisions required by law or regulations, TVA's reclamation provisions, and its coal quality guarantees. However, TVA continued to require prospective surface-mined coal suppliers to submit reclamation and conservation plans for TVA's approval and to include provisions in term contracts for the reclamation and conservation of affected lands. Contracts of less than 6 months' duration contain technical provisions similar to those of term contracts, except a mining plan and a reclamation withholding account are not required.

TVA's coal purchasing problems were increased by poor delivery service. During fiscal year 1974, deliveries under term coal contracts were about 24 percent short of schedule.

TVA officials said a shortage of rail cars was a major delivery problem. Deficiencies in deliveries were also caused by, among other things, compliance with the Federal Coal Mine Health and Safety Act of 1969. Because market prices for coal exceeded TVA's term contract prices, some contractors restricted deliveries and other contractors stopped deliveries altogether. According to TVA, it initiated legal action against five contractors to compel deliveries under their contracts. In June 1974, the U.S. District Court permanently enjoined one contractor from selling coal to other purchasers until it had made deliveries to TVA, as required by the contract. In two other cases injunctions to the same effect were brought against contractors, another case was resolved by agreement between the contracting parties, and one case is pending.

Other reasons for the failure of some contractors to fulfill their contracts include: strikes, mine closures, shortages of operating supplies and spare parts, equipment breakdowns, unrealistic performance estimates, and mine safety and reclamation laws.

In addition, coal suppliers were reluctant to make longer term contracts with TVA and the quality of the coal delivered declined. Although TVA often awards coal contracts covering periods of 15 years or longer, the average length of term contracts negotiated in fiscal year 1974 was about

30 months. Because of the lower quality of coal received, additional quantities were needed to make up the loss in heat content.

During the year the prices TVA paid for coal rose sharply as its coal stockpiles declined. TVA's average cost of coal received in fiscal year 1974 was \$8.54 a ton, compared to \$7.44 a ton in fiscal year 1973. In 1974, spot purchases resulted in consistently higher prices each month, increasing from a low of 33 cents per million Btu's¹ (average delivered price) in July 1973 to a high of 55 cents in March 1974, a 67-percent increase. Because of its concern about escalating prices, in late 1973 and early 1974 TVA rejected nine offers from suppliers to sell about 685,000 tons of coal at prices the agency considered excessive.

Under a term contract awarded in June 1974, TVA will pay 93 cents per million Btu's. This price is 166 percent higher than the average cost of 35 cents per million Btu's in 1973 and was the highest price TVA had paid for coal. In 1974, TVA adjusted power rates so that customers' monthly billings reflected the effect of increases or decreases in the actual cost of fuel burned, as discussed on pages 4 and 5.

Coal stockpiles at TVA's steam plants decreased from about 12.5 million to 8.8 million tons, or about 30 percent, during fiscal year 1974. This represented a decline from a 100- to a 69-day supply at the expected burn rate. Although TVA attempted to maintain a 60- to a 90-day coal supply at June 30, 1974, inventories at individual steam plants were as low as a 23-day supply at two plants and a 37-day supply at a third plant.

On August 15, 1974, TVA announced that it might require electric power curtailments during the 1974-75 winter season--winter is the period of highest power demand in the TVA service area--because of its decreasing coal stockpiles and the difficulty in obtaining additional coal supplies. Moreover, on September 24, 1974, TVA requested that its power customers

¹British thermal unit (Btu) is the amount of heat required to raise the temperature of 1 pound of water 1 degree Fahrenheit.

voluntarily reduce their use of electricity by 20 percent to conserve coal.

On August 27, 1974, a Member of Congress asked our Office to evaluate TVA's coal supply situation. In our report (B-114850, Nov. 4, 1974) we discussed the reasons for the coal shortage, the possible effects of a shortage, the plans made and actions taken by TVA, and additional steps which TVA and others could take to avoid cutbacks in electric service.

TVA's coal stockpiles declined further with the miners' strike from November 12 to December 5, 1974. During this period, TVA purchased additional electric energy from other utilities, reduced electric service to the Atomic Energy Commission, and took other steps to lessen the impact of the strike. Nevertheless, TVA's systemwide stockpiles declined from a 45-day to a 34-day supply during the strike period.

At the end of 1974, TVA's stockpiles contained a 38-day supply of coal at the normal burn rate. Consumption of electricity had declined 10 percent from a year earlier, apparently a result of the cutback of power to the Atomic Energy Commission, milder temperatures, and conservation efforts.

FERTILIZER PROGRAM

TVA's National Fertilizer Development Center at Muscle Shoals, Alabama, administers a nationwide program consisting primarily of (1) basic and applied research and development and (2) introduction of new and improved fertilizers to the farming and fertilizer manufacturing industries.

Although the program was established to serve domestic needs, during the early 1960s TVA shared the results of its fertilizer research with foreign countries through the Agency for International Development and other international organizations. This led to TVA's establishing an International Fertilizer Development staff to coordinate international activities of the center. In June 1974 TVA reported that since its international program began in 1963, more than 50 teams of scientists have traveled to 30 countries to assist in the analysis and development of fertilizer production units or marketing and distribution systems.

Developmental production

Developmental production of new and improved fertilizers was carried out at Muscle Shoals on a semicommercial scale and was the link between the research and development and the farm and industry demonstrations. In 1969, TVA developed a plan to restructure its developmental production program primarily to reduce costs, improve its basic production facilities, and make use of more desirable fertilizer ingredients.

TVA's planned changes were substitution of commercial wet-process phosphoric acid for TVA-produced electric-furnace acid as a source of phosphates and a shift from the production of solid nitrates to fertilizers containing urea. According to TVA, the new plan will save about \$6 million in facility expenditures during fiscal years 1972 through 1976. However, TVA had not fully carried out the scheduled plan because of unsettled fertilizer marketing conditions and the lack of sufficient quantities of wet-process phosphoric acid.

Shifting the production of basic phosphate raw materials and intermediates from TVA to private producers was not completed at June 30, 1974, as planned. According to TVA, wet-process acid sells at a price below the production cost of furnace acid and the margin continues to widen in favor of wet-process acid. Using commercial sources would eliminate TVA's high operating costs for mining, electric-furnace, and acid unit operations; avoid large expenditures for maintenance and replacement of basic facilities; and avoid large capital outlays for meeting pollution and worker safety standards.

Through June 30, 1974, TVA had been unable to find a reliable, economic supply of wet-process acid, and as a result the agency expected to continue operating its phosphorus production facilities through December 1976. TVA estimated that, during fiscal years 1976 through 1980, its annual requirements for wet-process acid (in units of P_2O_5) will be 90,000 tons. TVA had solicited bids for a supply of the acid in July 1971, September 1973, and January 1974. In response to the July 1971 solicitation, TVA received four bids and bought 7,000 tons of wet-process acid. No bids were received from the other two solicitations.

Book value of the phosphorus facility was \$10.2 million at June 30, 1974. One of the three furnaces was retired in fiscal year 1972 but was later brought back into use, and the other furnaces were to be retired by June 30, 1974. Because the revived facility will be operating after Alabama's air pollution regulations become effective on May 31, 1975, TVA spent \$296,000 in fiscal year 1974 and has budgeted about \$1 million for fiscal year 1975 to modify the facility to comply with the new regulations.

Dropping the production of granular nitrate and nitrate-phosphate fertilizers will conclude TVA's distributor introduction program for these materials and processes. TVA started making this change in fiscal year 1974 when it converted a portion of its facilities from nitrate to urea-based production. This change will reduce operating expenses; limit the need for investment in new facilities, including those for abating nitric acid pollution; and provide storage that would otherwise have to be built for fertilizers containing urea. TVA's original schedule provided that it would discontinue production of nitrate materials by June 30, 1973; however, it delayed closing its nitrate production facilities a few months because the facilities had not been completely modified for urea-based fertilizer production.

In October 1973 TVA retired two of its three nitric acid units that originally cost \$1.5 million but had a net book value of about \$106,000. In July 1974 TVA had not decided on the disposition of the final unit and was studying methods of operating the nitrate facilities in compliance with Alabama's air pollution standards.

OTHER MATTERS

In a report to the Congress (B-167941, Sept. 20, 1974), GAO recommended that, when making benefit-cost analyses for Federal water resources projects, TVA and certain other agencies and departments should:

- Revise or develop their detailed procedures for making benefit-cost determinations and submit them to the Water Resources Council.

- Periodically evaluate their detailed procedures to recognize changed objectives, needs, and conditions and improved methods and procedures.
- Strengthen their internal management procedures for assessing (1) benefit-cost determinations for conformance to governing principles and standards, (2) implementing and detailed procedures, and (3) the completeness and adequacy of supporting documentation.

The recommendations in our report were directed toward carrying out the Water Resource Council's new principles and standards. TVA said it had no objection to our recommendations.

CHAPTER 3

SCOPE OF EXAMINATION

Our examination of TVA's balance sheet as of June 30, 1974 and 1973, and the related statements of power and non-power programs and of changes in financial position for the years then ended (exhibits I through IV) was made in accordance with generally accepted auditing standards and included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

As provided by section 15d(c) of the TVA Act, TVA employs a firm of certified public accountants to audit its accounts and financial statements for each fiscal year, to facilitate its issuance and sale of revenue bonds. This audit does not take the place of the audit required by our Office under the Government Corporation Control Act. As a part of the examination, we observed and tested the firm's audit work, and our satisfaction with its quality and scope enabled a substantial reduction in the extent of our own examination.

CHAPTER 4

OPINION ON FINANCIAL STATEMENTS

In our opinion the financial statements (exhibits I through IV) present fairly TVA's financial position at June 30, 1974 and 1973, and the results of its operations and the changes in the financial position of its several programs for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

The supplemental information appearing in schedules A to F, inclusive, which has been subjected to audit procedures applied in the examination of the basic financial statements, is, in our opinion, fairly stated in relation to the basic financial statements taken as a whole.

EXHIBIT I

TENNESSEE VALLEY AUTHORITY

(A CORPORATION WHOLLY OWNED BY THE UNITED STATES OF AMERICA)

BALANCE SHEETS JUNE 30, 1974 AND 1973

A S S E T S

	Power program		All programs	
	1974	1973	1974	1973
	(Thousands)			
PROPERTY, PLANT, AND EQUIPMENT, substantially all at original cost				
Completed plant; schedule A				
Multipurpose dams; note 1	\$ 489,745	\$ 489,435	\$1,015,509	\$1,014,358
Single-purpose dams	65,869	65,736	65,869	65,736
Steam production plants	2,137,260	1,944,471	2,137,260	1,944,471
Other electric plant	1,369,060	1,320,837	1,369,060	1,320,837
Other plant	-	-	173,541	164,522
	<u>4,061,934</u>	<u>3,820,479</u>	<u>4,761,239</u>	<u>4,509,924</u>
Less accumulated depreciation and depletion; note 2	<u>1,242,414</u>	<u>1,156,187</u>	<u>1,380,806</u>	<u>1,288,784</u>
Completed plant, net	<u>2,819,520</u>	<u>2,664,292</u>	<u>3,380,433</u>	<u>3,221,140</u>
Construction and investigations in progress; schedule B and note 3	<u>1,551,961</u>	<u>1,318,645</u>	<u>1,635,750</u>	<u>1,386,808</u>
Nuclear fuel	133,345	93,090	133,345	93,090
Less accumulated provision for amortization; note 2	<u>3,402</u>	<u>-</u>	<u>3,402</u>	<u>-</u>
Nuclear fuel, net	<u>129,943</u>	<u>93,090</u>	<u>129,943</u>	<u>93,090</u>
Total property, plant, and equipment	<u>4,501,424</u>	<u>4,076,027</u>	<u>5,146,126</u>	<u>4,701,038</u>
CURRENT ASSETS				
Cash	82,723	63,356	111,187	110,082
Accounts receivable	94,437	71,333	104,358	79,241
Inventories, principally at average cost	<u>128,681</u>	<u>140,772</u>	<u>136,118</u>	<u>146,473</u>
Total current assets	<u>305,841</u>	<u>275,461</u>	<u>351,663</u>	<u>335,796</u>
DEFERRED CHARGES				
Unamortized debt expense; note 2	891	701	891	701
Other	<u>552</u>	<u>600</u>	<u>552</u>	<u>600</u>
Total deferred charges	<u>1,443</u>	<u>1,301</u>	<u>1,443</u>	<u>1,301</u>
Total assets	<u>\$4,808,708</u>	<u>\$4,352,789</u>	<u>\$5,499,232</u>	<u>\$5,038,135</u>

Notes 1 through 8 following the exhibits are an integral part of the financial statements.

*Deduct

EXHIBIT I

L I A B I L I T I E S

	Power program		All programs	
	1974	1973	1974	1973
	(Thousands)			
PROPRIETARY CAPITAL				
Appropriation investment; note 4				
Total congressional appropriations	\$1,383,467	\$1,383,332	\$2,683,500	\$2,637,824
Transfers of property from other Federal agencies	21,840	21,517	54,100	53,701
	<u>1,405,307</u>	<u>1,404,849</u>	<u>2,737,600</u>	<u>2,691,525</u>
Less repayments to General Fund of the U.S. Treasury; note 5	390,059	370,059	431,686	411,674
Appropriation investment	<u>1,015,248</u>	<u>1,034,790</u>	<u>2,305,914</u>	<u>2,279,851</u>
Retained earnings reinvested in the power program; exhibit II	866,418	823,686	866,418	823,686
Accumulated net expense of nonpower programs; exhibit III	-	-	624,025*	582,536*
Total proprietary capital	<u>1,881,666</u>	<u>1,858,476</u>	<u>2,548,307</u>	<u>2,521,001</u>
LONG-TERM DEBT				
Principal; note 6	2,125,000	1,775,000	2,125,000	1,775,000
Unamortized discount* and premium, net; note 2	8,604*	6,551*	8,604*	6,551*
Total long-term debt	<u>2,116,396</u>	<u>1,768,449</u>	<u>2,116,396</u>	<u>1,768,449</u>
SHORT-TERM NOTES				
U.S. Treasury; note 6	100,000	100,000	100,000	100,000
Other; note 6	570,000	480,000	570,000	480,000
Unamortized discount; note 2	13,901*	7,130*	13,901*	7,130*
Total short-term notes	<u>656,099</u>	<u>572,870</u>	<u>656,099</u>	<u>572,870</u>
OTHER CURRENT LIABILITIES				
Accounts payable	112,295	115,146	122,429	125,654
Employees' accrued leave	13,431	12,871	24,388	23,033
Payrolls accrued	6,738	6,104	9,530	8,255
Interest accrued	22,083	17,972	22,083	17,972
Total other current liabilities	<u>154,547</u>	<u>152,093</u>	<u>178,430</u>	<u>174,914</u>
CONTRIBUTIONS IN AID OF CONSTRUCTION; exhibit IV				
	-	901	-	901
COMMITMENTS; note 3				
Total liabilities	<u>\$4,808,708</u>	<u>\$4,352,789</u>	<u>\$5,499,232</u>	<u>\$5,038,135</u>

EXHIBIT II

TENNESSEE VALLEY AUTHORITY
POWER PROGRAM
NET INCOME AND RETAINED EARNINGS
FOR THE YEARS ENDED JUNE 30, 1974 AND 1973

	1974		1973	
	kWh	Amount	kWh	Amount
	(Thousands)			
OPERATING REVENUES				
Sales of electric energy				
Municipalities and cooperatives	64,182,511	\$556,166	63,822,013	\$476,354
Federal agencies	17,388,119	121,552	17,112,478	103,166
Industries	23,790,067	179,767	21,864,681	144,732
Electric utilities	122,191	1,166	92,169	791
Total outside sales	105,482,888	858,651	102,891,341	725,043
Interdivisional	661,841	4,992	581,272	3,988
Total sales of electric energy	106,144,729	863,643	103,472,613	729,031
Rents		19,983		20,349
Total operating revenues		883,626		749,380
OPERATING EXPENSES; schedule C				
Production		494,156		408,765
Transmission		20,847		18,921
Customer accounts		494		498
Demonstration of power use		1,283		1,272
Administrative and general		29,907		27,379
Payments in lieu of taxes		31,118		27,310
Social security taxes		4,611		3,816
Provision for depreciation		97,083		89,468
Total operating expenses		679,499		577,429
Operating income		204,127		171,951
OTHER INCOME AND DEDUCTIONS				
Interest income		-		25
Allowance for funds used (construction and nuclear fuel); note 2		85,992		73,357
Other, net		581*		418
Total other income and deductions		85,411		73,800
Income before interest charges		289,538		245,751
INTEREST CHARGES				
Interest on long-term debt		149,178		111,399
Other interest expense; note 2		33,787		27,642
Amortization of long-term debt discount, expense, and premium, net; note 2		419		289
Total interest charges		183,384		139,330
NET INCOME		106,154		106,421
Payment of return on appropriation investment; note 5		63,422		53,785
Increase in retained earnings reinvested		42,732		52,636
Retained earnings reinvested at beginning of period		823,686		771,050
Retained earnings reinvested at end of period		\$866,418		\$823,686

Notes 1 through 8 following the exhibits are an integral part of the financial statements.

*Deduct

EXHIBIT III

TENNESSEE VALLEY AUTHORITY
 NONPOWER PROGRAMS
 NET EXPENSE AND ACCUMULATED NET EXPENSE
 FOR THE YEARS ENDED JUNE 30, 1974 AND 1973

	1974	1973
	(Thousands)	
WATER RESOURCES DEVELOPMENT		
Navigation operations		
Studies and investigations	\$ 1,047	\$ 975
Operation and maintenance of facilities	5,187	4,985
Total expense of navigation operations	<u>6,234</u>	<u>5,960</u>
Flood control operations		
Studies and investigations	894	1,166
Operation and maintenance of facilities	4,194	3,930
Local flood control improvements	441	7
Total expense of flood control operations	<u>5,529</u>	<u>5,103</u>
Recreation projects		
Recreation resources development	665	682
Operation and maintenance of facilities	1,846	1,785
Total expense of recreation projects	<u>2,511</u>	<u>2,467</u>
Regional water quality management	1,546	1,563
Fisheries and waterfowl resources development	540	494
Preliminary surveys and engineering (including \$605,000 in 1974, and \$2,065,000 in 1973 related to abandoned projects)	863	2,526
Total expense of water resources development	<u>17,223</u>	<u>18,113</u>
FERTILIZER AND MUNITIONS DEVELOPMENT		
Developmental production		
Cost of products distributed	26,336	26,912
General expenses		
Loss on retirements of manufacturing plant and equipment, net	1,004	71
Gain on sale of phosphate reserves, net	99*	134*
Other general expenses	1,163	1,018
Total general expenses	<u>2,068</u>	<u>955</u>
Total production expense	<u>28,404</u>	<u>27,867</u>
Less transfers and sales of products		
Transfers to TVA programs, at market prices		
Fertilizer industry demonstrations	22,475	19,748
Farm test demonstrations	431	345
Agricultural projects	422	169
Other	95	61
	<u>23,423</u>	<u>20,323</u>
Direct sales	431	70
Total transfers and sales	<u>23,854</u>	<u>20,393</u>
Net expense of developmental production	<u>4,550</u>	<u>7,474</u>
Fertilizer introduction		
Fertilizer industry demonstrations		
Fertilizers used	22,475	19,748
Educational distribution expense	1,392	1,291
	<u>23,867</u>	<u>21,039</u>
Less industry payments for fertilizer	<u>22,057</u>	<u>19,094</u>
	<u>1,810</u>	<u>1,945</u>

*Deduct

BEST DOCUMENT AVAILABLE

EXHIBIT III

TENNESSEE VALLEY AUTHORITY

NONPOWER PROGRAMS

NET EXPENSE AND ACCUMULATED NET EXPENSE
FOR THE YEARS ENDED JUNE 30, 1974 AND 1973

	1974	1973
	(Thousands)	
FERTILIZERS AND MUNITIONS DEVELOPMENT - continued		
Fertilizer introduction - continued		
Farm test demonstrations outside the Valley		
Fertilizers used	\$ 431	\$ 345
Planning and supervision	661	624
	1,092	969
Less farmer payments for fertilizer	283	192
	809	777
Net expense of fertilizer introduction	2,619	2,722
Research and development	5,650	5,553
Net expense of fertilizer and munitions development	12,819	15,749
GENERAL RESOURCES DEVELOPMENT		
Agricultural projects		
Agricultural resource development		
Fertilizers used	416	169
Planning and supervision	946	909
	1,362	1,078
Less farmer payments for fertilizer	356	90
	1,006	988
Development investigations and general expenses	604	509
Net expense of agricultural projects	1,610	1,497
Forest and wild land resources development	1,522	1,367
Tributary area development	2,209	1,755
Interagency health services demonstrations	120	-
Regional development planning	636	914
Townlift community improvement	744	723
Demonstrations in education and manpower development	731	803
Minerals projects	269	274
Environmental quality projects	492	430
Net expense of general resources development	8,333	7,763
LAND BETWEEN THE LAKES OPERATIONS	2,498	2,306
VALLEY MAPPING AND REMOTE SENSING	482	469
OTHER EXPENSE, NET	134	-
NET EXPENSE; schedule D	41,489	44,400
Accumulated net expense at beginning of period	582,536	538,136
Accumulated net expense at end of period	\$624,025	\$582,536

Notes 1 through 8 following the exhibits are an integral part of the financial statements.

EXHIBIT IV

TENNESSEE VALLEY AUTHORITY
CHANGES IN FINANCIAL POSITION
FOR THE YEARS ENDED JUNE 30, 1974 AND 1973

	Power program		All programs	
	1974	1973	1974	1973
	(Thousands)			
SOURCE OF FUNDS				
Program sources				
Net power income; exhibit II	\$ 106,154	\$ 106,421	\$ 106,154	\$ 106,421
Add items not requiring funds; note a	12,404	16,241	12,404	16,241
Funds from power operations	118,558	122,662	118,558	122,662
Sale of power facilities	1,904	665	1,904	665
Funds from power program; note b	120,462	123,327	120,462	123,327
Net expense of nonpower programs; exhibit III			41,489*	44,400*
Add items not requiring funds; note a			8,283	7,547
Funds used in nonpower operations			33,206*	36,853*
Sale of nonpower facilities			761	1,131
Funds used in nonpower programs			32,445*	35,722*
Debt sources				
Long-term bonds				
Issues	450,000	550,000	450,000	550,000
Redemptions	100,000*	-	100,000*	-
Short-term notes				
Issues	1,375,000	1,520,000	1,375,000	1,520,000
Redemptions	1,285,000*	1,670,000*	1,285,000*	1,670,000*
Total debt sources	440,000	400,000	440,000	400,000
Other sources				
Congressional appropriations	135	226*	45,676	64,550
Property transfers	323	212	399	343
Contributions in aid of construction (reclassified in 1974 to property, plant, and equipment)	901*	3	901*	3
Total source of funds	\$ 560,019	\$ 523,316	\$ 573,191	\$ 552,501
DISPOSITION OF FUNDS				
Expended for plant and equipment, excluding allowance for funds used	\$ 443,745	\$ 407,715	\$ 474,896	\$ 431,436
Less salvage from plant transfers, and depreciation charged to construction and clearing accounts	4,506	2,282	6,922	4,714
	439,239	405,433	467,974	426,722
Payments to U.S. Treasury; note 5				
Return on appropriation investment	63,422	53,785	63,422	53,785
Repayment of appropriation investment	20,000	20,000	20,012	20,029
	83,422	73,785	83,434	73,814
Unamortized debt discount and expense				
Long-term discount	2,411	1,931	2,411	1,931
Short-term discount	6,771	1,611	6,771	1,611
Debt expense	250	261	250	261
	9,432	3,803	9,432	3,803
Changes in working capital (increase or decrease*)				
Cash	19,367	12,593	1,105	23,247
Accounts receivable	23,104	10,163	25,117	8,788
Inventories	12,091*	31,449	10,355*	31,908
	30,380	54,205	15,867	63,943
Less other current liabilities	2,454	13,910	3,516	15,781
	27,926	40,295	12,351	48,162
Total disposition of funds	\$ 560,019	\$ 523,316	\$ 573,191	\$ 552,501

*Deduct

EXHIBIT IV

TENNESSEE VALLEY AUTHORITY CHANGES IN FINANCIAL POSITION FOR THE YEARS ENDED JUNE 30, 1974 AND 1973

NOTES:

- a. Items not requiring funds:

	Power		Nonpower	
	1974	1973	1974	1973
	(Thousands)			
Provisions for depreciation	\$97,083	\$89,468	\$7,370	\$7,600
Provisions for depletion	266	211	8	10
Loss or gain* on retirements and disposals of property, plant, and equipment, net	581	418*	905	63*
Amortization of long-term debt discount, premium, and expense; and deferred charges - other	466	337	-	-
Allowance for funds used (construction and nuclear fuel)	85,992*	73,357*	-	-
	<u>\$12,404</u>	<u>\$16,241</u>	<u>\$8,283</u>	<u>\$7,547</u>

- b. Net power proceeds (see note 6) may be derived as follows:

	Year ended June 30	
	1974	1973
	(Thousands)	
Funds from power program	\$120,462	\$123,327
Add back interest charges	<u>182,965</u>	<u>139,041</u>
Net power proceeds	<u>\$303,427</u>	<u>\$262,368</u>

Notes 1 through 8 following the exhibits are an integral part of the financial statements.

*Deduct

TENNESSEE VALLEY AUTHORITY
NOTES TO FINANCIAL STATEMENTS

1. Allocation of cost of multipurpose projects--Section 14 of the TVA Act requires TVA's Board of Directors to allocate the cost of completed multipurpose projects, subject to the approval of the President of the United States. The cost of facilities installed exclusively for a single purpose is assigned directly to that purpose; the cost of multiple-use facilities is allocated among the various purposes served.

The total investment of \$1,015,509,000 in completed multipurpose dams at June 30, 1974, is classified as follows:

	Direct	Investment	Total
		Multiple-use (Thousands)	
Power	\$312,299	\$177,446	\$ 489,745
Navigation	151,462	137,151	288,613
Flood control	59,656	135,225	194,881
Recreation	267	24,428	24,695
Tributary area development	20	17,555	17,575
Total	\$523,704	\$491,805	\$1,015,509

2. Summary of significant accounting policies--Power accounts are kept in accordance with the uniform system prescribed for electric utilities by the Federal Power Commission.

Plant additions and retirements--Additions to plant are recorded at cost, which includes material, labor, overhead, and allowance for funds used. The costs of generation including amortization of nuclear fuel, less credit for the fair value of energy generated during preliminary operations prior to commercial acceptance, are also included in the recorded cost of steam and nuclear generating plants. Except for chemical plant, plant retirements (including original cost and removal cost less salvage) are charged against appropriate accumulated depreciation accounts. Because of the experimental nature of fertilizer and munitions development, losses on early retirement of chemical plant are included in current year operations.

Depreciation and depletion--Straight-line depreciation is provided for substantially on a composite basis. Rates of depreciation are derived from engineering studies of useful life and are reviewed each year. Depletion of coal land and land rights and phosphate land and mineral rights is provided on a unit of production basis.

Allowance for funds used--The practice of capitalizing an allowance for funds used during construction and during the fabrication of nuclear fuels is followed in the power program. The rate is established at the beginning of each 6-month period on the basis of the cost of borrowings during the preceding 12 months. Rates used were 6.5 percent and 7.5 percent during 1974 and 6.0 percent and 6.0 percent during 1973.

Repairs and maintenance--The cost of current repairs and minor replacements is charged to appropriate operating expense and clearing accounts, and the cost of renewals and betterments is capitalized.

Nuclear fuel amortization--The amortization of nuclear fuel is provided on a unit of production basis. Rates are established to amortize the costs over the useful life.

Operating revenues--Revenues from the sale of electric energy include only the amounts billed during the period.

Borrowing expenses--Expenses, discounts, and premiums on power borrowings are amortized on a straight-line basis over the term of the related securities. Amortization of discount on short-term notes is charged to other interest expense.

3. Estimates of cost to complete major construction projects, commitments, and rental expenses--The cost to complete the major power projects (including nuclear fuel) under construction or authorized for construction at June 30, 1974, is estimated to be \$5,852,700,000 including commitments of \$1,688,600,000 for materials and services contracted for and not delivered. The corresponding estimate for multipurpose and nonpower projects is \$171,600,000, including commitments of \$5,134,000.

On June 22, 1972, the TVA Board of Directors approved a Utility Contribution Agreement with Breeder Reactor Corporation (BRC), a District of Columbia nonprofit corporation. The agreement obligates TVA to pay to Breeder Reactor Corporation the sum of \$21.7 million over a 10-year period with equal annual payments beginning December 31, 1972, and ending December 31, 1981. The payment is on behalf of TVA and its distributors in support of the Nation's first commercial-scale liquid metal fast breeder reactor demonstration plant project. At June 30, 1974, the remaining commitment was \$16,275,000.

The total rentals charged to power operating expenses and other operating clearing accounts for the years ending June 30, 1974 and 1973, amounted to approximately \$11,931,000 and \$11,350,000, respectively. At June 30, 1974, the aggregate minimum gross rental commitments of TVA under all noncancelable leases for the periods shown are as follows:

Year	Amount	Years	Amount
	(Thousands)		(Thousands)
1975	\$9,826	1980-84	\$38,148
1976	9,270	1985-89	5,251
1977	8,696	1990-94	226
1978	8,333	Thereafter	326
1979	8,318		

TENNESSEE VALLEY AUTHORITY
NOTES--CONTINUED

Minimum gross rental commitments include rentals paid under agreements with the City of Memphis, Tennessee, which provide that (1) TVA sells to the City all the power and energy requirements of its electric distribution system, and (2) the City leases to TVA the Thomas H. Allen steam-electric generating plant with an installed capacity of 990,000 kilowatts. Each agreement is for a term of 20 years, beginning January 1, 1965. The lease agreement provides for annual rental payments of \$6,900,000 and grants TVA an option to buy the plant for \$2,000,000 at the end of the lease term.

4. Appropriation investment--Changes in appropriation investment during the years ended June 30, 1974 and 1973, were as follows:

	Power program		All programs	
	1974	1973	1974	1973
	(Thousands)			
Congressional appropriations	\$ 135	\$ 226*	\$ 45,676	\$ 64,550
Transfers of property from other Federal agencies	323	212	399	343
	<u>458</u>	<u>14*</u>	<u>46,075</u>	<u>64,893</u>
Less repayments to General Fund of the U.S. Treasury	<u>20,000</u>	<u>20,000</u>	<u>20,012</u>	<u>20,029</u>
Increase or decrease* for the period	19,542*	20,014*	26,063	44,864
Balance, beginning of period	<u>1,034,790</u>	<u>1,054,804</u>	<u>2,279,851</u>	<u>2,234,987</u>
Balance, end of period	<u>\$1,015,248</u>	<u>\$1,034,790</u>	<u>\$2,305,914</u>	<u>\$2,279,851</u>

*Deduct

An additional appropriation of \$77,400,000 as of July 1, 1974, is pending action in the Congress.

5. Payments to the U.S. Treasury--Section 15d of the TVA Act requires the payment from net power proceeds of a return on the net appropriation investment in power facilities plus repayments of such investment, beginning with fiscal year 1961. The amount of return payable during each year is based on the appropriation investment as of the beginning of that year and the computed average interest rate payable by the U.S. Treasury on its total marketable public obligations as of the same date. The repayment schedule calls for payment of not less than \$10 million for each of the first five years (1961-1965); \$15 million for each of the next five years (1966-1970), and \$20 million for each year thereafter until a total of \$1 billion shall have been repaid. The payments required by Section 15d may be deferred under certain circumstances for not more than two years.

Required payments have been made as follows:

	<u>Return</u>	<u>Repayment</u>	<u>Total</u>
	(Thousands)		
Total to June 30, 1973	\$622,988	\$185,000	\$807,988
Year ended June 30, 1974	<u>63,422</u>	<u>20,000</u>	<u>83,422</u>
	<u>\$686,410</u>	<u>\$205,000</u>	<u>\$891,410</u>

For 1975 the required payments will be \$71,372,000 as a return on the appropriation investment at the computed average interest rate of 7.030 percent and \$20,000,000 as a repayment, a total of \$91,372,000.

In addition to the payments from net power proceeds, \$12,000 of nonpower proceeds was paid to the U.S. Treasury in 1974 under the provisions of Section 26 of the TVA Act. This brought the total payments from nonpower proceeds to \$41,626,000.

Prior to 1961, under then existing legislation, TVA paid to the Treasury \$185,059,000 of power proceeds. In addition to the repayments indicated in Exhibit I, \$65,072,000 of bonds sold to the Treasury and Reconstruction Finance Corporation in fiscal years 1939-1941 have been fully repaid from power proceeds. Section 26 of the TVA Act provides for annual payments to the Treasury of any power or nonpower proceeds not needed for the operation of dams and reservoirs, the conduct of the power program, and the manufacture and distribution of fertilizers.

TENNESSEE VALLEY AUTHORITY
NOTES--CONTINUED

6. Borrowing authority--Section 15d of the TVA Act authorizes TVA to issue bonds, notes, and other evidences of indebtedness up to a total of \$5 billion outstanding at any one time to assist in financing its power program. Debt service on these obligations, which is payable solely from TVA's net power proceeds, has precedence over the payments to the U.S. Treasury described in note 5. Issues outstanding on June 30, 1974, consist of the following:

	(Thousands)
Long-term debt	
4.40% 1960 Series A, due November 15, 1985	\$ 50,000
4-5/8% 1961 Series A, due July 1, 1986	50,000
4-1/2% 1962 Series A, due February 1, 1987	45,000
5.70% 1967 Series A, due May 15, 1992	70,000
6-3/8% 1967 Series B, due November 1, 1992	60,000
8-1/4% 1969 Series B, due October 15, 1994	100,000
9% 1970 Series A, due March 15, 1995	100,000
9-1/4% 1970 Series B, due June 15, 1995	50,000
8-3/4% 1970 Series C, due June 15, 1975 (To be refinanced)	50,000
7-1/4% 1971 Series A, due July 1, 1976	100,000
7.30% 1971 Series B, due October 1, 1996	150,000
7% 1972 Series A, due January 1, 1997	150,000
7.35% 1972 Series B, due May 1, 1997	150,000
7.35% 1972 Series C, due July 1, 1997	150,000
7.40% 1972 Series D, due October 1, 1997	150,000
7.35% 1973 Series A, due January 1, 1998	100,000
7.35% 1973 Series B, due April 1, 1998	150,000
7-3/4% 1973 Series C, due July 1, 1998	150,000
7.70% 1973 Series D, due October 1, 1998	100,000
8.0% 1974 Series A, due January 1, 1999	100,000
8.10% 1974 Series B, due April 1, 1979	100,000
Total long-term debt	2,125,000
Short-term notes	
U.S. Treasury	100,000
Other	570,000
Total short-term notes	670,000
	<u>\$2,795,000</u>

The Federal Financing Bank Act enacted on December 29, 1973, permits designated Federal agencies, including TVA, to borrow directly from the Federal Financing Bank in order to reduce the cost of Federal borrowings. On July 11, 1974, the TVA Board of Directors approved issuance of short-term notes payable to the Federal Financing Bank, not to exceed \$350 million outstanding at any one time.

7. Retirement plan--TVA has a contributory retirement plan which covers substantially all of its salaried employees. The cost of currently accruing benefits is funded currently, and the unfunded prior service cost is being amortized and funded over a period of 32 years from July 1, 1973. Certain actuarial assumptions used in determining 1974 cost were changed upon recommendation by the actuary; the net effect of the changes reduced the 1974 cost by \$2.2 million. The cost of the plan to TVA for the years ended June 30, 1974 and 1973, was \$18,104,000 and \$18,683,000, respectively.

8. Litigation--On July 5, 1972, the Environmental Defense Fund and other plaintiffs filed suit to enjoin TVA from constructing the Duck River project, consisting of the Normandy and Columbia Dams, on various grounds, including alleged failure to comply with the National Environmental Policy Act (NEPA) by, among other things, filing an inadequate environmental impact statement for the project. Following a trial on the NEPA issues, all other issues having been decided in TVA's favor by an earlier court order, the District Court found on March 7, 1974, that the environmental impact statement was deficient in four areas and thereafter enjoined construction of the project effective midnight, March 30, 1974. On TVA's motions the District Court subsequently stayed the injunction through June 29, 1974, to enable work on the project to continue while TVA complied with the law. During the period the injunction has been stayed, TVA has prepared and circulated a draft supplement to the environmental impact statement addressing the deficiencies found by the court in its March 7 memorandum. TVA filed a final supplement with the Council on Environmental Quality on June 18, 1974. On June 14, 1974, plaintiffs filed a notice of appeal to the United States Court of Appeals for the Sixth Circuit from the District Court's order staying the injunction through June 29. On TVA's motion the District Court on July 1, 1974, further stayed the injunction pending appeal and any action for certiorari thereon and until further order of the court. On July 29, 1974, the Court of Appeals denied appellants' motion for an injunction pending appeal and on its own motion dismissed the appeal as moot. Counsel for TVA believe that the revised environmental impact statement complies with the National Environmental Policy Act.

On October 25, 1972, the Natural Resources Defense Council and five other plaintiffs filed suit in the District Court to enjoin TVA from accepting coal under four specified contracts and from entering into any future contracts calling for the purchase of strip-mined coal. Plaintiffs alleged that TVA is violating the National Environmental Policy Act by not requiring separate environmental statements for each contract and that the overall environmental statement filed by TVA on its policies concerning its coal procurement program was inadequate. It was, and is, the view of counsel for TVA that the environmental statement complies with the National Environmental Policy Act. On August 13, 1973, the District Court entered a judgment dismissing the action. The court held, among other things, that TVA is not required to file a separate environmental statement for each contract and that TVA's coal policy environmental statement is adequate compliance with the National Environmental Policy Act. The plaintiffs appealed the District Court's decision and the case was argued orally before the Sixth Circuit Court of Appeals on June 10, 1974. No opinion has been rendered by the Court of Appeals.

BEST DOCUMENT AVAILABLE

SCHEDULE A

TENNESSEE VALLEY AUTHORITY
COMPLETED PLANT
JUNE 30, 1974

	Assets	Depreciation and depletion	
		Provision year ended June 30, 1974	Accumulated balance June 30, 1974
Power			
Multipurpose dams			
System allocation	\$ 430,342,614	\$ 5,805,942	\$ 161,066,498
Project allocations	59,402,668	883,822	6,861,289
Single-purpose dams	65,869,215	880,587	25,423,737
Steam production plants	2,137,259,572	58,176,949	699,802,539
Other electric plant	1,369,060,120	33,125,202	349,259,790
Total power	<u>4,061,934,189</u>	<u>98,872,502</u>	<u>1,242,413,853</u>
Navigation			
Multipurpose dams			
System allocation	228,395,891	2,205,559	50,139,638
Project allocations	60,217,025	557,140	4,252,779
Single-purpose navigation plant	<u>7,063,239</u>	<u>-</u>	<u>-</u>
Total navigation	<u>295,676,155</u>	<u>2,762,699</u>	<u>54,392,417</u>
Flood control			
Multipurpose dams			
System allocation	180,317,242	1,186,881	35,963,138
Project allocations	14,563,868	89,297	482,615
Single-purpose flood control plant	<u>2,191,278</u>	<u>13,537</u>	<u>119,670</u>
Total flood control	<u>197,072,388</u>	<u>1,289,715</u>	<u>36,565,423</u>
Tributary area development			
Multipurpose dams			
Project allocations	<u>17,575,405</u>	<u>99,366</u>	<u>466,842</u>
Recreation and conservation education			
Multipurpose dams			
Project allocations	24,694,528	127,279	296,302
Land Between The Lakes	49,062,694	413,268	2,411,948
Other recreation plant	<u>1,134,791</u>	<u>29,571</u>	<u>84,886</u>
Total recreation and conservation education	<u>74,892,013</u>	<u>570,118</u>	<u>2,793,136</u>
Chemical	<u>68,278,341</u>	<u>2,427,604</u>	<u>23,734,784</u>
General	<u>45,810,490</u>	<u>2,340,523</u>	<u>20,439,687</u>
Total	<u>\$4,761,238,981</u>	<u>\$108,362,527</u>	<u>\$1,380,806,142</u>
Total completed plant			
Multipurpose dams			
System allocation	\$ 839,055,747	\$ 9,198,382	\$ 247,169,274
Project allocations	<u>176,453,494</u>	<u>1,756,904</u>	<u>12,359,827</u>
1,015,509,241	<u>10,955,286</u>	<u>259,529,101</u>	
Single-purpose dams	65,869,215	880,587	25,423,737
Steam production plants	2,137,259,572	58,176,949	699,802,539
Other electric plant	1,369,060,120	33,125,202	349,259,790
Other plant	<u>173,540,833</u>	<u>5,224,503</u>	<u>46,790,975</u>
Total	<u>\$4,761,238,981</u>	<u>\$108,362,527</u>	<u>\$1,380,806,142</u>

SCHEDULE B

TENNESSEE VALLEY AUTHORITY
CONSTRUCTION AND INVESTIGATIONS IN PROGRESS
JUNE 30, 1974

	<u>Power program</u>	<u>All programs</u>
Construction in progress		
Generating facilities		
Browns Ferry Nuclear Plant	\$ 693,867,435	\$ 693,867,435
Sequoyah Nuclear Plant	422,457,822	422,457,822
Watts Bar Nuclear Plant	137,042,975	137,042,975
Proposed Bellefonte Nuclear Plant	36,317,171	36,317,171
Proposed Hartsville Nuclear Plant	6,749,543	6,749,543
Cumberland Steam Plant	2,913,139	2,913,139
Johnsonville gas turbine units 1-10	65,741	65,741
Raccoon Mountain pumped storage project	129,776,114	129,776,114
Total generating facilities	<u>1,429,189,940</u>	<u>1,429,189,940</u>
Transmission lines, substations, and other additions to power facilities	<u>118,941,864</u>	<u>118,941,864</u>
Navigation facilities		<u>384,247</u>
Flood control facilities		<u>531,347</u>
Multipurpose facilities		
Tellico Dam and Reservoir	-	41,056,575
Columbia Dam and Reservoir	-	4,133,321
Normandy Dam and Reservoir	-	18,518,665
Bear Creek water control system	-	9,178,424
Other	291,519	704,578
Total multipurpose facilities	<u>291,519</u>	<u>73,591,563</u>
Chemical plant		<u>2,307,905</u>
Recreation and conservation education facilities		
Land Between The Lakes		4,163,109
Other recreation facilities		949,013
Total recreation and conservation education facilities		<u>5,112,122</u>
General plant		
General construction equipment and materials	-	892,661
Other additions to general plant	387,730	979,750
Total general plant	<u>387,730</u>	<u>1,872,411</u>
Total construction in progress	<u>1,548,811,053</u>	<u>1,631,931,399</u>
Investigations for future projects		
Power facilities	3,149,632	3,149,632
Navigation facilities	-	117,903
Flood control facilities	-	528,823
Multipurpose facilities	-	22,313
Total investigations for future projects	<u>3,149,632</u>	<u>3,818,671</u>
Total construction and investigations in progress	<u>\$1,551,960,685</u>	<u>\$1,635,750,070</u>

SCHEDULE C

TENNESSEE VALLEY AUTHORITY DETAILS OF POWER EXPENSE FOR THE YEAR ENDED JUNE 30, 1974

SUMMARY	Total	Provision for depreciation	Total before depreciation (exhibit II)	Operation	Maintenance	Other
Production						
Multipurpose dams						
Direct	\$ 11,824,404	\$ 5,463,222	\$ 6,421,122	\$ 3,566,379	\$ 2,854,743	\$ -
Multiple-use; schedule E	4,889,977	1,226,422	3,663,495	2,745,897	917,598	-
Single-purpose dams	2,893,439	880,527	2,012,852	919,781	1,093,071	-
Cumberland Basin projects; note a	11,941,195	-	11,941,195	-	-	11,941,195
Steam plants	476,263,706	58,176,949	418,086,757	363,616,896	54,469,861	-
Gas turbine plants	7,818,500	2,613,149	5,205,351	4,787,560	417,791	-
Total generation	515,691,221	68,360,449	447,330,772	375,636,513	59,753,064	11,941,195
Purchased power	15,395,808	-	15,395,808	-	-	15,395,808
Interchange power received	18,866,332	-	18,866,332	-	-	18,866,332
Interchange power delivered	16,925,513*	-	16,925,513*	-	-	16,925,513*
System control and load dispatching	1,520,619	25,761	1,494,858	-	-	1,494,858
Other	27,994,143	-	27,994,143	-	-	27,994,143
Total production	562,542,610	68,386,210	494,156,400	375,636,513	59,753,064	58,766,623
Transmission	47,559,538	26,712,896	20,846,642	12,395,150	8,451,492	-
Customer accounts	494,198	-	494,198	494,198	-	-
Demonstration of power use	1,282,503	-	1,282,503	1,282,503	-	-
Payments in lieu of taxes; note b	31,118,477	-	31,118,477	-	-	31,118,477
Social security taxes	4,610,673	-	4,610,673	-	-	4,610,673
Administrative and general						
Direct	31,759,238	1,983,882	29,775,356	29,772,934	2,422	-
Multiple-use	131,940	-	131,940	131,940	-	-
Total operating expense	\$679,499,177	\$97,082,988	\$582,416,189	\$419,713,238	\$68,206,974	\$94,495,973

SYSTEM STATISTICS	kWh generated less station use (thousands)	Production expense		Installed capacity at June 30, 1974 (kilowatts)	Ratio of average gross generation to installed capacity (percent)
		Total	including depreciation Per kWh (mills)		
Generation					
Multipurpose dams					
Direct	15,976,131	\$ 11,824,404	.744	2,952,470	61.99
Multiple-use; schedule E	-	4,889,977	.36	-	-
Total multipurpose dams	15,976,131	16,714,381	1.00	2,952,470	61.99
Single-purpose dams	1,509,166	2,893,439	1.917	24,340	70.89
Cumberland Basin projects; note a	3,643,040	11,941,195	3.270	853,000	51.17
Alcoa dams; note c	2,408,030	4,472,440	1.858	463,115	65.00
Total hydro generation	23,536,367	44,001,055	1.870	4,472,440	66.77
Steam plants	83,437,815	476,263,706	5.70	17,749,705	50.05
Gas turbine plants	291,658	7,818,500	26.807	1,633,600	30.9
Total commercial generation; note d	107,265,840	562,345,211	5.23	20,026,310	55.94
Purchased power	1,046,677	15,395,808	14.69	-	-
Interchange power received	8,520,868	18,866,332	22.02	-	-
System control and load dispatching	-	1,520,619	1.520	-	-
Other; note e	2,593,689	27,994,143	10.79	-	-
Total system input	119,427,274	625,061,311	5.23	-	-
Delivered under Alcoa agreement	1,649,496*	-	-	-	-
Interchange power delivered	8,408,179*	16,925,513*	2.00	-	-
Net energy supply	109,169,599	502,542,010	4.59	-	-
Shop and internal uses	5,417*	-	-	-	-
Transmission and transformation losses	3,019,453*	-	-	-	-
Total kWh sales and production expense	106,144,729	\$582,542,010	5.49	-	-

Notes:

- TVA purchases substantially all of the output of eight hydro plants in the Cumberland River Basin. In accordance with memorandums of understanding with the Corps of Engineers, Department of the Army, the Cumberland Basin projects are operated for optimum production of power in conjunction with TVA's power system, subject to flood control, navigation, and other operating requirements of the Army.
- Payments made to states and counties in which power operations are carried out. The basic amount is 5 percent of gross revenues from the sale of power to other than Federal agencies during the preceding year, with the provision of minimum payments under certain circumstances.
- Operation of twelve hydro plants of the Aluminum Company of America is coordinated with the operation of TVA's power plants under an arrangement whereby the storage and release of water from the Alcoa plants are carried out by the company under TVA's direction.
- Installed capacity increased 1,426,550 kilowatts during fiscal year 1974. Additions consisted of the second 1,300,000-kilowatt generating unit at the Cumberland Steam Plant, 100,000 kilowatts in three units at the new Cordell Hull Dam in the Cumberland Basin, and 26,550 kilowatts from modifications to two generators.
- "kWh generated" included 2,593,889,000 kWh generated during test runs of the second generating unit at the Cumberland Steam Plant and of the first unit at the Browns Ferry Nuclear Plant. The expenses of the generation, less credit for the fair value of energy delivered to the TVA power system, were charged to construction.

*Debit

SCHEDULE D

TENNESSEE VALLEY AUTHORITY DETAILS OF NONPOWER NET EXPENSE FOR THE YEAR ENDED JUNE 30, 1974

	Direct	Multiple-use (schedule E)	Total
WATER RESOURCES DEVELOPMENT			
Navigation operations			
Studies and investigations			
Navigation engineering and investigations	\$ 998,549	\$ -	\$ 998,549
Administrative and general expenses; schedule F	48,626	-	48,626
	<u>1,047,175</u>	<u>-</u>	<u>1,047,175</u>
Operation and maintenance of facilities			
Operation	13,777	1,671,335	1,685,112
Maintenance	21,784	632,862	654,646
Administrative and general expenses	-	83,962	83,962
Provision for depreciation	<u>1,824,196</u>	<u>938,504</u>	<u>2,762,700</u>
	<u>1,859,757</u>	<u>3,326,663</u>	<u>5,186,420</u>
Total expense of navigation operations	<u>\$2,906,932</u>	<u>\$3,326,663</u>	<u>6,233,595</u>
Flood control operations			
Studies and investigations			
System studies and investigations	\$ 355,577	\$ -	355,577
Local flood studies and cooperation with other agencies	510,168	-	510,168
Administrative and general expenses; schedule F	<u>28,366</u>	<u>-</u>	<u>28,366</u>
	<u>894,111</u>	<u>-</u>	<u>894,111</u>
Operation and maintenance of facilities			
Operation	130,479	2,011,532	2,142,011
Maintenance	-	662,493	662,493
Administrative and general expenses	-	99,955	99,955
Provision for depreciation	<u>361,456</u>	<u>928,258</u>	<u>1,289,714</u>
	<u>491,935</u>	<u>3,702,238</u>	<u>4,194,173</u>
Local flood control improvements	<u>440,757</u>	<u>-</u>	<u>440,757</u>
Total expense of flood control operations	<u>\$1,826,803</u>	<u>\$3,702,238</u>	<u>5,529,041</u>
Recreation projects			
Recreation resources development	\$ 612,353	\$ -	612,353
Administrative and general expenses; schedule F	<u>52,679</u>	<u>-</u>	<u>52,679</u>
	<u>665,032</u>	<u>-</u>	<u>665,032</u>
Operation and maintenance of facilities			
Operation	-	1,566,047	1,566,047
Maintenance	37,913	5,330	43,243
Administrative and general expenses	-	79,964	79,964
Provision for depreciation	<u>36,247</u>	<u>120,603</u>	<u>156,850</u>
	<u>74,160</u>	<u>1,771,944</u>	<u>1,846,104</u>
Total expense of recreation projects	<u>\$ 739,192</u>	<u>\$1,771,944</u>	<u>2,511,136</u>
Regional water quality management			
Regional water quality management			1,461,201
Provision for depreciation			37,868
Administrative and general expenses; schedule F			<u>47,276</u>
Total expense of regional water quality management			<u>1,546,345</u>
Fisheries and waterfowl resources development			
Fisheries resource assessment			169,670
Fisheries resource management and use			193,322
Waterfowl management and use			138,163
Provision for depreciation			11,541
Administrative and general expenses; schedule F			<u>27,015</u>
Total expense of fisheries and waterfowl resources development			<u>539,711</u>

SCHEDULE D

TENNESSEE VALLEY AUTHORITY DETAILS OF NONPOWER NET EXPENSE FOR THE YEAR ENDED JUNE 30, 1974

WATER RESOURCES DEVELOPMENT - continued

Preliminary surveys and engineering	
Preliminary surveys and engineering (including \$605,391 related to abandoned projects)	\$ 848,302
Administrative and general expenses; schedule F	14,858
Total expense of preliminary surveys and engineering	<u>863,160</u>
Total expense of water resources development	<u>\$17,222,988</u>

FERTILIZER AND MUNITIONS DEVELOPMENT

Developmental production	
Cost of products distributed; note a	
Materials used	\$ 7,083,339
Direct manufacturing and shipping expense	15,892,906
Indirect manufacturing and shipping expense	2,605,019
Provisions for depreciation and depletion	2,401,608
Recoveries from byproducts and in-process materials	474,354*
In-process inventory changes	49,277
Finished inventory changes	1,125,748*
Exchange products shipped	95,994*
Total cost of products distributed	<u>26,336,053</u>
General expenses	
Loss on retirements of manufacturing plant and equipment, net	1,003,828
Gain on sale of phosphate reserves, net	98,420*
Other general expenses	
Administrative and general; schedule F	\$ 524,711
Shipping order and field inventory expense	246,891
Provision for depreciation of idle manufacturing plant and equipment	83,346
Other, including depreciation of \$2,565*	<u>308,008</u>
Total general expenses	<u>1,162,956</u>
Total production expense	<u>2,068,364</u>
Less transfers and sales of products	<u>28,404,417</u>
Transfers to TVA programs, at market prices	
Fertilizer industry demonstrations	22,475,393
Farm test demonstrations	430,942
Agricultural projects	421,853
Other	95,405
Total transfers	<u>23,423,593</u>
Direct sales	431,141
Total transfers and sales	<u>23,854,734</u>
Net expense of developmental production	<u>4,549,683</u>
Fertilizer introduction	
Fertilizer industry demonstrations	
Fertilizers used	22,475,393
Educational distribution expense	1,333,024
Administrative and general expenses; schedule F	<u>59,350</u>
Less industry payments for fertilizer; note b	<u>1,392,374</u>
	<u>23,867,767</u>
	<u>22,057,287</u>
	<u>1,810,480</u>
Farm test demonstrations outside the Valley	
Fertilizers used	430,942
Planning and supervision	635,423
Administrative and general expenses; schedule F	<u>25,628</u>
	<u>661,051</u>
Less farmer payments for fertilizer	<u>1,091,993</u>
	<u>283,410</u>
	<u>808,583</u>
Net expense of fertilizer introduction	<u>2,619,063</u>

*Deduct

SCHEDULE D

TENNESSEE VALLEY AUTHORITY DETAILS OF NONPOWER NET EXPENSE FOR THE YEAR ENDED JUNE 30, 1974

FERTILIZER AND MUNITIONS DEVELOPMENT - continued

Research and development	
Research and development of products and processes	
Applied research	\$ 963,028
Process engineering	1,156,140
General expenses	696,358
	<u>2,815,526</u>
Research and development of processes for recovery of sulfur	187,662
Basic chemical and agronomic research	2,322,056
Provision for depreciation	97,993
Administrative and general expenses; schedule F	226,611
	<u>5,649,848</u>
Total expense of research and development	
Net expense of fertilizer and munitions development	<u>\$12,818,594</u>

GENERAL RESOURCES DEVELOPMENT

Agricultural projects	
Valley agricultural resources development	
Fertilizers used	\$ 415,909
Planning and supervision	945,853
	<u>1,361,762</u>
Less farmer payments for fertilizer	356,166
	<u>1,005,596</u>
Special agricultural investigations and technical assistance	\$ 78,545
Agribusiness development	83,460
Program planning and analysis	91,214
High-income agricultural enterprises, including fertilizers used of \$5,944	81,776
Studies of agricultural uses of heated water	133,223
Economic evaluation of livestock waste disposal systems	19,728
Tennessee Valley rural life conferences	59,233
Administrative and general expenses; schedule F	56,652
	<u>603,831</u>
Net expense of agricultural projects	<u>1,609,427</u>
Forest and wild land resources development	
Forest industry development	254,545
Forest and wildlife management and wildlife use	414,733
Forest and wild land investigations	313,454
Improvement and establishment of wild land vegetation	340,197
Strip mine reclamation	116,399
Provision for depreciation	12,370
Administrative and general expenses; schedule F	70,238
	<u>1,521,936</u>
Tributary area development	
Basic investigations	369,602
Development assistance in specific tributary areas	1,505,646
Administrative and general expenses; schedule F	116,163
Multiple-use operating expenses; schedule E	
Operation and maintenance	114,760
Provision for depreciation, including \$194 direct	99,366
Administrative and general expenses	3,998
	<u>218,124</u>
Total expense of tributary area development	<u>2,209,535</u>
Interagency health services demonstrations	
Interagency health services demonstrations	115,520
Administrative and general expenses; schedule F	4,052
	<u>119,572</u>
Regional development planning	
Regional development planning	599,797
Administrative and general expenses; schedule F	36,470
	<u>636,267</u>
Total expense of regional development planning	

SCHEDULE D

TENNESSEE VALLEY AUTHORITY DETAILS OF NONPOWER NET EXPENSE FOR THE YEAR ENDED JUNE 30, 1974

GENERAL RESOURCES DEVELOPMENT - continued

Townlift community improvement	
Townlift community improvement	\$ 713,108
Administrative and general expenses; schedule F	31,067
Total expense of townlift community improvement	<u>744,175</u>
Demonstrations in education and manpower development	
Demonstrations in education and manpower development	667,475
Administrative and general expenses; schedule F	63,485
Total expense of demonstrations in education and manpower development	<u>730,960</u>
Minerals projects	
Mineral resources investigations	259,536
Administrative and general expenses; schedule F	9,455
Total expense of minerals projects	<u>268,991</u>
Environmental quality projects	
Regional air quality management	125,617
Research on disposal of solid wastes	343,605
Administrative and general expenses; schedule F	22,963
Total expense of environmental quality projects	<u>492,185</u>
Net expense of general resources development	<u>\$ 8,333,048</u>
LAND BETWEEN THE LAKES OPERATIONS	
Land Between The Lakes operations	\$ 2,016,317
Provision for depreciation	413,266
Administrative and general expenses; schedule F	68,888
Total expense of Land Between The Lakes operations	<u>\$ 2,498,473</u>
VALLEY MAPPING AND REMOTE SENSING	
Valley mapping and remote sensing	\$ 451,883
Provision for depreciation	13,793
Administrative and general expenses; schedule F	16,030
Total expense of valley mapping and remote sensing	<u>\$ 481,706</u>
OTHER EXPENSE OR INCOME*	
Emergency preparedness	\$ 8,254
Maintenance of bridges financed by others on TVA dams	153,588
Interest income from receivables	27,272*
Other expense, net.	<u>\$ 134,570</u>
NET EXPENSE	<u>\$41,489,379</u>

Notes:

- a. In the discharge of its obligations under Section 5 of the TVA Act, TVA operates plants for the manufacture of products for agricultural and military purposes; conducts research and pilot plant development of new or improved processes for the production of new or existing fertilizers and munitions; and tests the fertilizers produced and demonstrates their effectiveness. Production is carried out on an experimental basis, and costs are consequently affected by the developmental nature of the manufacturing operations.

Research on products and processes is not scaled to TVA's production operations. Its scope is determined by opportunities to render service in the public interest; findings are made available to the public through technical publications, answers to correspondence, and discussions with technical visitors to the laboratories and plants. For these reasons, the cost of such research is accounted for under a separate program rather than as a part of production operations.

- b. Sales of fertilizer materials are not on a commercial basis, but are made to organizations collaborating in an educational program aimed at improving the manufacture, distribution, and use of fertilizers.

SCHEDULE E

TENNESSEE VALLEY AUTHORITY OPERATING EXPENSES OF MULTIPLE-USE FACILITIES FOR THE YEAR ENDED JUNE 30, 1974

Expenses

Operation

Water dispatching	\$ 1,373,019
Water control investigations	179,260
Investigations and control of reservoir ecology	1,138,287
Plant protection and services to visitors	1,628,331
Operation and upkeep of dam reservations	1,219,688
Reservoir land management	1,966,562
Development of water resource management methods	269,866
Other expense	<u>325,086</u>

Total operation 8,100,099

Administrative and general expenses; schedule F 399,819

Maintenance 2,227,755

Provision for depreciation 3,313,019

Total \$14,040,692

Distributed to	Operation	Administrative and general	Maintenance	Depreciation	Total
Power operations	\$2,745,897	\$131,940	\$ 917,598	\$1,226,482	\$ 5,021,917
Navigation operations	1,671,335	83,962	632,862	938,504	3,326,663
Flood control operations	2,011,532	99,955	662,493	928,258	3,702,238
Recreation projects	1,566,047	79,964	5,330	120,603	1,771,944
Tributary area development	<u>105,288</u>	<u>3,998</u>	<u>9,472</u>	<u>99,172</u>	<u>217,930</u>
Total	<u>\$8,100,099</u>	<u>\$399,819</u>	<u>\$2,227,755</u>	<u>\$3,313,019</u>	<u>\$14,040,692</u>

SCHEDULE F

TENNESSEE VALLEY AUTHORITY ADMINISTRATIVE AND GENERAL EXPENSES FOR THE YEAR ENDED JUNE 30, 1974

Expenses	
Board of directors	\$ 283,571
Office of the general manager	302,414
Planning and budget staffs	368,965
Washington office	107,297
Information office, including technical library service	1,179,932
Equal employment opportunity staff	403,205
Division of personnel	2,832,997
Division of finance	3,503,664
Division of law	1,698,702
Division of property and supply	1,228,535
Medical and safety services	1,555,430
Other administrative and general	219,660
Total	<u>\$13,684,372</u>

	Amount	Percent of total
Distributed to		
Construction	\$ 5,784,008	42.27
Recovered through services billed to others at cost	187,177	1.37
Expense of programs		
Power	5,762,785	42.11
Water resources development		
Navigation	48,626	.36
Flood control	28,366	.21
Regional water quality management	47,276	.35
Fisheries and waterfowl resources development	27,015	.20
Preliminary surveys and engineering	14,858	.11
Recreation projects	52,679	.38
Multiple-use operations	399,819	2.92
Fertilizer and munitions development		
Developmental production	524,711	3.83
Fertilizer industry demonstrations	59,350	.43
Farm test demonstrations	25,628	.19
Research and development	226,611	1.66
General resources development		
Agricultural projects	56,652	.41
Forest and wild land resources development	70,238	.51
Tributary area development	116,163	.85
Interagency health services demonstrations	4,052	.03
Regional development planning	36,470	.27
Townlift community improvement	31,067	.23
Demonstrations in education and manpower development	63,485	.46
Minerals projects	9,455	.07
Environmental quality projects	22,963	.17
Land Between The Lakes operations	68,888	.50
Valley mapping and remote sensing	16,030	.11
Total	<u>\$13,684,372</u>	<u>100.00</u>

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